

Claims:

1. Spirally-rolled electrodes for batteries having a concentric circle shape or an elliptic shape with positive electrodes, negative electrodes and a separator therebetween, wherein;

(1) the said positive electrode and/or negative electrode comprise the combinations of plural electrode plates;

(2) each of the said combinations in the said positive electrode and/or the said negative electrode is constituted so that the total amount of the active material or pseudo-active material which are the main materials is substantially constant and;

(3) each electrode plate in the electrode comprising plural electrode plates is wound in series with an interval therebetween.

2. Spirally-rolled electrodes for batteries as set forth in claim 1, wherein each of the plural electrode plates comprising the said positive electrode and/or negative electrode has a lead terminal or a terminal equivalent to a lead terminal respectively.

3. Spirally-rolled electrodes for batteries as set forth in claim 1, wherein each of the plural electrode plates comprising at least in the said positive electrode has a metal

foil without active materials along the edge of one side in the winding direction and the said metal foil exposed over a separator.

4. Spirally-rolled electrodes for batteries wherein the electrodes for batteries having a concentric circle shape or an elliptic shape with a thin nickel positive electrode and a thin metal hydride negative electrode which are wound spirally interposing a separator therebetween has the characteristics as below:

(1) the said thin nickel positive electrode is the electrode around which plural positive electrode plates are wound in series in order;

(2) the said thin metal hydride negative electrode is the electrode around which one or plural negative electrodes are wound in series in order;

(3) plural electrode plates in each electrode are so combined that the total amount of the active material or pseudo-active material is substantially constant;

(4) plural electrode plates in each electrode are wound in series with an interval therebetween and;

(5) the thickness of an electrode at the side where the winding starts is thinner than the thickness of an electrode at the side where the winding ends in several electrode plates in an electrode comprising several electrode plates.

5. Spirally-rolled electrodes for batteries as set forth in claim 4, wherein each of the several electrode plates comprising the said positive electrode and the said negative electrode has at least two chamfered corners.

6. Spirally-rolled electrodes for batteries as set forth in claim 4, wherein the interval among the plural electrode plates comprising the said positive electrode and/or negative electrode is within the range of 1.0-5.0 mm.

7. Spirally-rolled electrodes for batteries as set forth in claim 4, wherein each of the several electrodes themselves has substantially the same area.

8. A secondary battery wherein the spirally-rolled electrodes for batteries are sealed having a concentric circle shape or an elliptic shape with a positive electrode and a negative electrode which are wound spirally interposing a separator therebetween has the structure as below:

- (1) the said positive electrode and/or negative electrode comprise with the combinations of plural electrode plates;
- (2) each of the said combinations in the said positive electrode and/or the said negative electrode so comprises that the total amount of the active material or pseudo- active material which

are the main materials is substantially constant and;

(3) each electrode plate in the electrode is wound in series with an interval therebetween.

9. A secondary battery as set forth in claim 8, wherein the thickness at the bottom of the said battery case (t_2) is thick enough for welding and the ratio (t_2/t_1) of the thickness at the bottom (t_2) to the thickness at the side wall (t_1) is not less than 1.5.

10. A secondary battery as set forth in claim 9, wherein thicker part is provided inside the battery case at the border of the side wall and the bottom of the said battery case.

11. A secondary battery as set forth in claim 9, wherein the adjacent positive terminal of the secondary battery is welded directly or indirectly by a metallic connector to the bottom of the neighboring battery case.